OREGON COASTAL NONPOINT PROGRAM
NOAA/EPA PROPOSED FINDING

C. ADDITIONAL MANAGEMENT MEASURES - FORESTRY

PURPOSE OF MANAGEMENT MEASURE: The purpose of this management measures is to identify additional management measures necessary to achieve and maintain applicable water quality standards and protect designated uses for land uses where the 6217(g) management measures are already being implemented under existing nonpoint source programs but water quality is still impaired due to identified nonpoint sources.

CONDITION FROM JANUARY 1998 FINDINGS: Within two years, Oregon will finalize its proposal to inspect operating OSDS, as proposed on page 143 of its program submittal. (1998 Findings, Section IV.C).

PROPOSED FINDING: Disapproval

RATIONALE:

Buffers for Herbicide Application on Type N Streams: On December 20, 2013, EPA and NOAA invited public comment on the State's approach to buffers for aerial application of herbicides on Type N (non-fish bearing) streams. In the December 20, 2013 proposed action, the agencies noted Oregon had published forest practice rules that required buffer zones for most pesticide applications. The rules did not, however, contain restrictions for aerial application of herbicides on Type N streams, which the 1998 and 2004 findings noted could leave those streams at risk. Type N streams comprise a significant portion of stream length in the coastal zone.

Oregon's response noted several regulations the State uses to manage its pesticides program. Specific to small, non-fish bearing streams, Oregon's coastal nonpoint program relies on the Chemical and Other Petroleum Product Rules (OAR 629-620-0000 through 800), Pesticide Control Law (ORS 634), best management practices set by the ODA, and pesticide label requirements under the Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA). For fungicides and nonbiological insecticides, Oregon requires that no spraying occur within 60 feet of a stream with flowing water at the time of application (OAR 629-620-0400(7)(b)). As noted above, however, the State does not have a buffer zone for aerial applications of pesticides on non-fish bearing streams.

The Agencies received thirty-five comments related to the State's pesticide programs. Several commenters expressed concern on health effects to people and aquatic life from aerial drift of herbicides and the presence of herbicides in blood and urine samples. Others noted that better notification before pesticide application, access to pesticide records, monitoring, and larger buffers were needed. Commenters also supported the State's program stating that the labeling requirements under FIFRA and best management practices required when applying pesticides

were adequate to protect people and aquatic species. Many commenters described studies of pesticide water quality data in the State, all noting that pesticide levels were detected. Some commenters concluded from these studies that pesticide levels were below thresholds of concern, while others concluded that the presence of pesticides showed that State regulations were insufficient to manage pesticides.

Because the State relies in large part on FIFRA labeling requirements for requirements on aerial application of herbicides non-fish bearing streams, the following is a brief description of the program. EPA's Pesticide Program performs a comprehensive risk assessment that evaluates risk to workers, homeowners, dietary risk and drinking water risk and non-target ecological risk. The pesticide risk assessment and registration process result in labeling requirements that vary. Examples of FIFRA label requirements on herbicide application from prohibitions on aerial application to suggestions on how and where the application occurs (US Environmental Protection Agency, 2012) (U.S. Environmental Protection Agency, 1993). EPA's risk assessment process for aerial agricultural applications generally assumes application at 10 feet above the crop canopy for the release height (citation). In coastal, forested areas in Oregon where herbicides are aerially applied in non-fish bearing streams, aerial application are approximately 70 to 80 feet above the crop canopy (citation).

EPA's pesticide risk assessment generally does not include an endangered species risk assessment at this time. However, in response to several pesticide-related lawsuits related to the adequacy of federal agencies in evaluating the impacts of pesticides on ESA-listed species, EPA, NMFS, United States Fish and Wildlife Service (USFWS), and United States Department of Agriculture (USDA) requested the National of Academy of Sciences (NAS) review existing methods for assessing risks of pesticides to listed species and recommend improvements. On April 30, 2013, the NAS released their report, and the agencies agreed to work jointly to implement the recommendations in a phased, iterative approach over 15 years. As a result, the programs are in the process using modified methods for risk assessment that may affect future labeling requirements and best management practices for herbicide applications that could affect ESA listed species (ESA, (BEST), (DELS), & Council, 2013).

Specific to ESA-related litigation filed in 2001, the Washington Toxics Coalition sued EPA for failing to consult with NOAA's National Marine Fisheries Service (NMFS) under Section 7 of the Endangered Species Act (ESA). On February 5, 2004, a court order went into effect that required EPA to initiate consultation with NMFS. EPA has since initiated consultation with NMFS on 37 pesticide active ingredients. NMFS has issued six final biological opinions (BiOps) for 29 active ingredients as well as a draft of the seventh BiOp for three remaining additional active ingredients. NMFS has not yet, however, issued BiOps for the five remaining active ingredients nor the seventh BiOp. **Ex. 5 - Deliberative**

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EPA evaluated non-fish bearing streams in the Highway 36 area in the midcoast of Oregon to look at the potential of herbicide transport downstream to fish-bearing streams. (Peter L and Alan – talk with Friday.)

It is also important to note an ongoing Exposure Investigation (EI) for the Highway 36 Corridor in the mid-coast region of Oregon in the Coastal Zone Management Area (Oregon Health Authority, Draft Final, 2014). EPA and NOAA received several comments related to aerial application of herbicides in the Highway 36 Corridor. Conclusions from the EI show that residents were exposed to herbicides during the investigation period, but it is not possible to confirm whether these exposures resulted from the aerial application of pesticides or from another source. Low levels of herbicides applied during aerial applications were found in 10 soil samples, but no herbicides were found in drinking water samples. EPA will be conducting air monitoring to determine the public health significance from aerial application of herbicides in the Highway 36 Corridor.

At the State level, Oregon has taken independent steps to address pesticide water quality issues. Key State agencies, including ODA, ODF, ODEQ, and the Oregon Health Authority, formed a team in 2007 that developed an interagency Water Quality Pesticide Management Plan to guide

State-wide and watershed-level actions to protect surface and groundwater from potential impacts of current pesticides. The plan, approved by EPA Region 10 in 2011, focuses on using water monitoring data as the driver for adaptive management actions. The plan includes a continuum of management responses, ranging from voluntary to regulatory actions. Regulatory actions are implemented using existing agency authorities, if the water quality concerns cannot be addressed through the collaborative team effort. The State's Pesticide Stewardship Partnership (PSP) Program is the primary mechanism for addressing pesticide water quality issues at the watershed level. Through the partnership, the ODEQ works with State and local partners to collect and analyze water samples and use the data to focus technical assistance and best management practices on streams and pesticides that pose a potential aquatic life or human health impact. The federal agencies compliment Oregon for its establishment of a multi-agency management team, development of its Water Quality Pesticide Management Plan, and implementation of its PSP Program. If fully implemented, where needed, across the coastal nonpoint management area, these actions would represent strong management measures for helping the State address key pesticide issues.

EPA's and NOAA's original basis for disapproval was inadequate riparian buffers for aerial application of herbicides on non-fish bearing streams. In addition to non-fish bearing streams comprising a large part of coastal stream length, there are additional opportunities for herbicides to enter streams through runoff since non-fish bearing streams lack buffer requirements. Ex. 5 - Deliberative

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Aerial drift and their effects on aquatic life and people remain a concern. The federal agencies note that water quality monitoring data on pesticides are still limited in the State and that ODEQ has only established eight PSP areas in seven watersheds, none of which are located within the coastal nonpoint management area. While the federal agencies recognize that the PSP program is expanding into two new watersheds, the agencies believe that, if monitoring data are to drive adaptive management, the State should develop and maintain more robust and targeted studies of the effectiveness of its pesticide monitoring and best management practices. These studies should include several sites within the coastal nonpoint management area. The federal agencies also encourage the State to design its monitoring program in consultation with EPA and NMFS so that it generates data that are also useful for EPA pesticide registration reviews and NOAA BiOps.

Ex. 5 - Deliberative

Ex. 5 - Deliberative These recommendations include:

- State-specific buffers on non-fish bearing streams for aerial application of herbicides;
- Public notification of bystanders, homes and businesses in close proximity to aerial applications, beyond community water managers prior to spraying;
- ;
- Increased effectiveness monitoring of pesticides and best management practicesBetter mapping of N-type streams and other sensitive sites and structures;

- State specific aerial application guidelines for drift control of pesticides;
- Annual applicator training, guidance and outreach for aerial applicators on how to reduce drift;
- The application guidelines and aerial applicator training should address such things as:
    - Application of pesticides as close to the crop canopy and at the slowest air speed that is safe for flight;
    - Applications when wind speed is between 1-10 mph;
    - Applications when wind is blowing away from sensitive sites or structures;
    - Calibration of nozzles and repair of leaks;
    - Correct nozzle selection, angle of release and placement on wingspan;
    - Use of largest droplet size possible to ensure crop coverage;
    - Use of drift reducing adjuvants;
    - Use of spray shields;
    - Evaluation of local meteorological conditions to evaluate most appropriate times of year, time of day or windows when weather patterns are conducive to effective aerial applications;
    - Use of maps and GPS to automatically shut off nozzles when crossing N-type streams and other sensitive sites;
    - Notification of bystanders, homes and businesses in close proximity to aerial applications.

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Ex. 5 - Deliberative These recommendations include:

- State-specific buffers on non-fish bearing streams for aerial application of herbicides;
- ~~Herbicide application guidelines for buffer and drift control such as reduced droplet size, consideration of terrain and weather conditions, better mapping of spray application area;~~
- Public notification of bystanders, homes and businesses in close proximity to aerial applications, beyond community water managers prior to spraying;
- ~~Better record keeping and transparency of public records~~;
- ~~Increased training and guidance for applicators; and~~
- Increased effectiveness monitoring of pesticides and best management practices
- Better mapping of N-type streams and other sensitive sites and structures;

- State specific aerial application guidelines for drift control of pesticides;
- Annual applicator training, guidance and outreach for aerial applicators on how to reduce drift;
- The application guidelines and aerial applicator training should address such things as:
    - Application of pesticides as close to the crop canopy and at the slowest air speed that is safe for flight;
    - Applications when wind speed is between 1-10 mph;
    - Applications when wind is blowing away from sensitive sites or structures;
    - Calibration of nozzles and repair of leaks;
    - Correct nozzle selection, angle of release and placement on wingspan;
    - Use of largest droplet size possible to ensure crop coverage;
    - Use of drift reducing adjuvants;
    - Use of spray shields;
    - Evaluation of local meteorological conditions to evaluate most appropriate times of year, time of day or windows when weather patterns are conducive to effective aerial applications;
    - Use of maps and GPS to automatically shut off nozzles when crossing N-type streams and other sensitive sites;
    - Notification of bystanders, homes and businesses in close proximity to aerial applications.

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